EXAMINER'S AMENDMENT & REASONS FOR ALLOWANCE

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Robert C. Kowert (Reg. No. 39,255) on 05/18/10.

I.   Examiner's Amendment:

In the Abstract:

Replace with the following new abstract:

--Techniques are provided for quickly reacquiring mutual exclusion locks (QRLs), such as in the case in which a single process repeatedly acquires and releases the lock and in which no other process attempts to acquire the same lock. When the first holder of a QRL first acquires the lock, it biases the lock to itself. Bias may be directed in different way or at different times in some realizations. Biasing may involve a one-time compare-and-swap instruction. Thereafter, this bias-holder can reacquire and release the lock free of atomic read-modify-write operations. If a second process attempts to acquire a QRL, then the lock may revert to a "default lock". Any standard mutual exclusion lock may be used as the default lock. A QRL lock may be reinitialized so that it can be rebiased.

Rebiasing may be valuable in the case of migratory data access patterns.-

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In the claims:

Claim 31:

- line 2, delete -- a biasable lock wherein --;

- line 4, replace "the biasable is" with – a bias able lock --;

- line 8, replace "the biasable lock provides at least acquisition
  sequences" with -- at least two acquisition sequences, provided by the
  biasable lock, --;

Claim 34;

- line 2, replace "TAT AS" with – TATAS --;

Claim 58;

- line 2, replace "a computer processor performing" with – performing by
  a computer processor --;

II.   REASONS FOR ALLOWANCE:

The prior arts of record do not explicit teach or render obvious the invention as recited in the independent claims.

The Burrows et al prior art (U.S. Pat. No. 6,662,364 B1) discloses a system and method is provided for controlling a request to acquire a target mutex. The target mutex is capable of designating whether it may be synchronized using a fast non atomic load/store sequence or expensive atomic hardware instructions. The method by which the target mutex is synchronized, in response to a request by a requesting thread, depends on whether the target mutex has designated the fast non atomic synchronization sequence or the expensive atomic synchronization sequence. When using the fast non atomic synchronization sequence, the target mutex can further designate a thread that is currently associated with the mutex.

However, the invention as claimed "subsequent to said storing, determining whether the biasable lock is still biased to the bias-holding thread, wherein the acquisition sequence completes successfully and free of atomic read-modify-write operations if the biasable lock is determined to still be biased to the bias-holding thread", when taken in the context of the claims as a whole, was not uncovered in the prior art's teaching.

Nor were references uncovered that would have provided a basis of evidence for asserting a motivation that one of ordinary skill in the art at the time the invention was made, knowing of the acquire mutex system capable of designating whether a mutex may be synchronized using a fast non atomic load/store sequence or expensive atomic

hardware instructions, would have integrated or modified to ensure that the bias-holding

thread gets the lock and free of atomic read-modify-write operations by determining

whether the biasable lock is still biased to the bias-holding thread subsequent to storing

a value in the a quick-lock filed, as claimed by the instant application.

Dependent claims are allowed as they depend upon allowable independent

claims.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to CHARLES E. ANYA whose telephone number is

(571)272-3757. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hyung Sough can be reached on 571-272-6799. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hyung S. Sough/
Supervisory Patent Examiner, Art Unit 2194
May 28, 2010

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